REMARKS

Claims 1, 14, 18, 31, 46, 58 and 67 have been amended. Claims 1-75 remain pending in the application. Reconsideration is respectfully requested in light of the following remarks.

Section 103(a) Rejections:

The Office Action rejected claims 1-21, 30-49, 52-69 and 75 under 35 U.S.C. § 103(a) as being unpatentable over Faulkner et al. (U.S. Patent No. 6,434,605) (hereinafter "Faulkner") in view of "Behavioral Specification Using XML" by McKee and Marshall (hereinafter "M&M"), claims 22 and 50 over Faulkner in view of M&M and further in view of Antoun (U.S. Patent No. 6,216,151), and claims 23-29, 51 and 70-74 over Faulkner in view of M&M and further in view of Brown et al. (U.S. Patent 6,646,659) (hereinafter "Brown"). Applicants respectfully traverse these rejections for at least the following reasons.

Regarding claim 1, Applicants submit that Faulkner in view of M&M does not teach a data representation language schema that describes an ordered set of messages and that indicates a sequence of the ordered set of message. Applicants further submit that Faulkner in view of M&M also fails to teach verifying a sequence of the first message in the ordered set of messages receivable by the destination according to the data representation language schema, wherein said verifying comprises accessing the data representation language schema to determine if the sequence of the first message complies with the sequence for the ordered set of messages as indicated by the data representation language schema.

Faulkner teaches verifying that messages are received in the same order that they were sent using a system wherein "[s]equence numbers may be attached as tags to messages so that messages are sent and received in the same order" (Faulkner, column 3, lines 7-9). Faulkner further teaches that sequence numbers are useful for guaranteeing

that messages are "delivered in the same order they were taken from the transmission queue" (Faulkner, column 8, lines 36-39) and that "each message is sent such that it is tagged with an individual sequence number that is increased by one for each message sent" (Faulkner, column 8, lines 40-43). Nowhere does Faulkner describe the use of a data representation language schema to define an ordered set of messages or to indicate a sequence for the ordered set of messages. M&M teaches the use of XML DTDs to describe system resources and application resource requirements, but fails to teach the use of XML DTDs, or of any type of data representation language schema, to define or verify a sequence of messages.

In response to Applicants' earlier arguments that the cited art fails to teach the use of a data representation language schema to describe the sequencing of messages or to describe an ordered set of messages, the Examiner, in the "Response to Arguments" section, states, "M&M teaches [that] a schema, such as one to describe 'what is supposed to happen when the software executes' can be a data representation language schema." Applicants submit however, that M&M's teachings regarding the use of XML to "describe system resources and application resource requirements" (M&M, section 2, paragraph 1) does not suggest or provide motivation for using a data representation language schema to describe or verify a sequence of messages.

Applicants further submit that the Examiner's proposed combination of Faulkner and M&M would not result in a system wherein the first message is one of an ordered set of messages receivable by a destination and described in a data representation schema. Nor would such a combination include verifying a sequence of the first message in the ordered set of message receivable by the destination according to the schema, wherein said verifying comprises accessing the data representation language schema to determine if the sequence of the first message complies with the sequence for the ordered set of messages as indicated by the data representation language schema. Instead, the proposed combination of Faulkner and M&M would result in a system that uses Faulkner's sequence numbers to verify that messages are received in a predetermined order, but wherein system resources and application resource requirements are described in an

XML DTD according to M&M. Since neither Faulkner nor M&M, either separately or in combination, provide any suggestion or motivation to describe or verify a sequence of messages using a data representation language schema, the combination would also not using a data representation language schema for such purposes. The Examiner admits that neither Faulkner nor M&M teaches the use of a data representation language schema for defining an ordered set of messages (Final Office Action, page 3, lines 2-4, page 24, Response to Arguments, paragraph 89(a), lines 1-5). Additionally M&M teaches the use of XML only for describing system resources and application resource requirements and to extend software interface definitions to include information about constraints on the ranges of the inputs (M&M, section 4, paragraph 1, lines 20-23 and section 2, paragraph 1). Thus, Applicants fails to see how a combination of Faulkner and M&M could result in a system that includes using a data representation language schema to describe or verify a sequence of messages.

Furthermore, the Examiner's suggested motivation to combine Faulkner and M&M (that "there is a need for a simple and flexible way to provide and manage services in a distributed computing environment") only describes a need for providing and managing services, such as through the use of resource descriptions in the teachings of M&M, but does not provide any motivation to modify Faulkner to include the use of a data representation language schema to describe or verify a sequence of messages according to a sequence of messages indicated in a data representation schema.

The Examiner, in response to Applicants' earlier argument that a modification of Faulkner to verify the order of messages according to a data representation language schema would be contrary to the teachings of Faulkner, states, "[t]he Applicant fails to explain why the modification would no longer use the sequence number tags." As stated in Applicants' response to the Office Action dated January 22, 2004, Faulkner teaches the use of sequence numbers specifically so that "messages are sent and received in the same order" (Faulkner, column 3, lines 6-12) and that "[e]ach message is tagged with an associated sequence value that identifies the position of the message within the sequence" (Faulkner, column 3, lines 55-57). If Faulkner were modified, as suggested by the

Examiner, to verify the order of messages using a data representation language schema, the sequence numbers would no longer have any purpose under Faulkner, as it would not make sense to verify a sequence of message using both sequence numbers and according to an indicated sequence in a data representation language schema. Such a proposed modification would necessarily obviate the need for sequence numbers. Faulkner does not suggest a benefit to using any mechanism other than his sequence numbers for verifying the order of messages. M&M does not provide any motivation to define or verify a sequence of messages using a data representation language schema, and certainly does not provide any motivation to modify an existing sequence verification system, such as Faulkner's, in order to use a data representation language schema. Hence, Applicants assert that such a modification would be contrary to and would change the principle of operation of Faulkner invention.

As stated above, neither Faulkner nor M&M, either singly or in combination teach a data representation language schema defining an ordered set of messages or verifying a sequence of a message in an ordered set of messages by accessing the data representation language schema to determine if the sequence of the first message complies with the sequence for the ordered set of messages as indicated by the data representation language schema. Thus, Applicants submit that in light of the above remarks, the rejection of claim 1 is not supported by the cited art and withdrawal of the rejection is respectfully requested. Similar remarks as discussed above in regard to claim 1 apply to claims 18, 31, 46, 58, and 67.

Regarding claim 3, the Examiner states, "Faulkner in view of M&M teaches ... the first source resending the first message in response to said notifying." Applicants disagree with the Examiner's interpretation of Faulkner. Faulkner teaches that if a sequence error is detected, and the communication channel has failed, a channel reset command is issued which "resets the sequence values that are tagged to messages to the correct sequence number" (Faulkner, column 8, lines 54-59). Additionally, Faulkner teaches "[a] reset of the sequence value to a known sequence value is initiated such that the next message to be sent in the sequence is tagged with a known sequence value"

(emphasis added) (Faulkner, column 3, lines 59-63). Hence, Faulkner teaches that the sequence values should be reset so that both the sender and receiver expect the next message to be tagged with a known sequence number. Thus, the channel reset in Faulkner only means that future (next) messages from a message queue will be sent with a known sequence value. Faulkner does not teach that any previously sent message will be resent in response to a notification that the message was out of sequence.

In the "Response to Arguments" section of the Final Action, the Examiner states, "[s]ince Faulkner teaches sequence numbers are useful for guaranteed delivery, it is inherent that a message would be sent in sequence after a notification", cited column 8, lines 35-40 of Faulkner. Applicants note however, that this is an incorrect interpretation of Faulkner. The cited portion of Faulkner states, "[m]essage sequence numbering is useful in environments where messages are guaranteed to be delivered" (emphasis added). Thus, Faulkner is not teaching that sequence numbers are useful for guaranteeing delivery of messages, but rather that in environments that guarantee the delivery of messages (without duplication and in the order they are taken from a transmission queue) sequencing numbers can be useful. Such sequence numbers cannot verify that a sender is correctly using a predetermined sequence of messages if the underlying messaging transport environment doesn't already guarantee the messages and guarantee that they are received in the same order they were sent. In other words, if the underlying environment were to allow messages to be received in an order different from the order they are taken off a transmission queue, the receiver could not determine whether an out of sequence message is the result of the sender not properly following a predetermined sequence of messages, or just a reordering during transmission.

Therefore Applicants assert that Faulkner's use of sequence numbers does not inherently include resending a message in response to an out-of-sequence notification. If, as the Examiner contends, the resending of messages were inherent in Faulkner's use of sequence numbers, a message would be resent whenever a sequence error was detected. Yet, this is clearly not the case. In fact, Faulkner specifically teaches, "[i]f a sequence error is detected and the channel is running, the sequence error is regarded as an

erroneous message." (Faulkner, column 8, lines 52-54) Thus, Faulkner actually teaches issuing a channel reset command, which the Examiner equates to an out-of-sequence notification, because the channel is not running, not because a message is out of sequence.

Further, Faulkner does not teach that messages are resent in response to a channel reset command as the Examiner contends. Faulkner clearly teaches, "[t]he reset command resets the sequence values that are tagged to messages to correct the sequence number" (emphasis added) (Faulkner, column 8, lines 57-59) and further states, "[t]he ACSER component takes corrective action to reset channel sequence numbers." (emphasis added) (Faulkner, column 5, lines 21-23). Faulkner teaches this even more clearly by stating, "[a] reset of the sequence value to a known sequence value is initiated such that the next message to be sent in the sequence is tagged with a known sequence value" (emphasis added) (Faulkner, column 3, lines 59-63).

Any interpretation of Faulkner to include the resending of messages in response to a channel reset command is clearly speculation on the Examiner's part. Applicants can find no such teaching in either Faulkner or M&M, either separately or in combination. In light of the above remarks, Applicants assert that the rejection of claim 3 is not supported by the cited art and withdrawal of the rejection is respectfully requested. Similar remarks as discussed above in regard to claim 3 apply to claim 33.

Regarding claim 7, the Examiner states, "Faulkner in view of M&M ... teaches the service providing the message conductor to the client device." Applicants respectfully disagree with the Examiner's interpretation of Faulkner in view of M&M. Faulkner teaches, "[a]n MCA is a program that controls the sending of and receiving of messages" and is "positioned at each end of a channel" (Faulkner, column 2, lines 27-29, and Figure 6). Applicants can find no teaching if Faulkner regarding a service providing a message conductor to a client device.

M&M teaches the dynamic loading of "services by sending programs along with the information they are sending across a network" (M&M, section 1, paragraph 1, lines 15-18) and the use of XML to describe system resources and application resource requirements to "allow the user or service provider to build collaborative applications with predictable performance characteristics" (M&M, section 3, paragraph 1, lines 1-3). Applicants can find no teaching in M&M regarding a service providing a message conductor to a client device. Applicants note that the Examiner has fails to respond to the specific argument in the "Response to Arguments" section of the Final Action.

In light of the above remarks, Applicants assert that the rejection of claim 7 is not supported by the cited art and withdrawal of the rejection is respectfully requested. Similar remarks as discussed above in regard to claim 7 apply to claim 12.

Regarding claim 9, the Examiner states, "Faulkner in view of M&M teaches ... a message conductor configured to verify the sequence of messages according to the data representation language schema." Applicant disagree with the Examiner's interpretation of Faulkner if view of M&M. As shown above in the arguments regarding claim 1, Faulkner in view of M&M does not teach or suggest verifying a sequence of messages according to a data representation schema and also fails to teach or suggest a message conductor configured to verify the sequence of messages according to the data representation language schema. Applicants note that the Examiner has fails to respond to the specific argument in the "Response to Arguments" section of the Final Action.

In light of the above remarks, Applicants assert that the rejection of claim 9 is not supported by the cited art and withdrawal of the rejection is respectfully requested. Similar remarks as discussed above in regard to claim 9 apply to claim 63.

Regarding claim 14, the Examiner states, "Faulkner in view of M&M teaches ... receiving a plurality of messages in the data representation language from a plurality of sources to be sent to the destination, wherein the plurality of messages are each from the ordered set of messages receivable by the destination and described in the data

representation language schema; verifying a sequence of the plurality of messages in the ordered set of messages receivable by the destination according to the data representation language schema." Applicant disagree with the Examiner's interpretation of Faulkner if view of M&M. As shown above in the arguments regarding claim 1, Faulkner in view of M&M does not teach or suggest verifying a sequence of messages according to a data representation schema and also <u>fails to teach</u> or suggest wherein a plurality of messages are each from the ordered set of messages <u>described in the data representation language schema</u> and <u>verifying a sequence of the plurality of messages</u> in the ordered set of messages <u>according to the data representation language schema</u>.

In light of the above remarks, Applicants assert that the rejection of claim 14 is not supported by the cited art and withdrawal of the rejection is respectfully requested. Similar remarks as discussed above in regard to claim 14 apply to claim 64.

Further regarding claim 18, the Examiner states, "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to take the method disclosed by Faulkner and modify it as indicated by M&M where a method for communicating in a distributed computing environment, comprises: receiving a plurality of request messages in a data representation language from a first source to be sent to a destination, wherein the plurality of request messages are an ordered set of messages receivable by the destination and described in a data representation schema; verifying a sequence of the plurality of request messages receivable by the destination according to the data representation language schema; and sending the plurality of request messages in sequence to the destination." Applicants respectfully disagree with the Examiner.

Faulkner teaches a system wherein "[s]equence numbers may be attached as tags to messages so that messages are sent and received in the same order" (Faulkner, column 3, lines 7-9). Faulkner further teaches that sequence numbers are useful for guaranteeing that messages are "delivered in the same order they were taken from the transmission queue" (Faulkner, column 8, lines 36-39) and that "each message is sent such that it is tagged with an individual sequence number that is increased by one for each message

sent" (Faulkner, column 8, lines 40-43). Hence, under Faulkner there is no provision for verifying a sequence of the plurality of request messages receivable by the destination according to the data representation language schema, just that messages are received in the same order that they were sent. Further, applicants can find no reference in M&M regarding the sequencing of messages or of verifying the sequence of messages according to a data representation schema.

In light of the above remarks, Applicants assert that the rejection of claim 18 is not supported by the cited art and withdrawal of the rejection is respectfully requested. Similar remarks as discussed above in regard to claim 18 apply to claims 46, and 67.

Applicants also assert that numerous other ones of the dependent claims recite further distinctions over the cited art. Since the rejection has been shown to be unsupported for the independent claims, a further discussion in regard to the remaining dependent claims is not necessary at this time.

CONCLUSION

Applicants submit the application is in condition for allowance, and notice to that effect is respectfully requested.

If any extension of time (under 37 C.F.R. § 1.136) is necessary to prevent the above referenced application from becoming abandoned, Applicants hereby petition for such extension. If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5181-70100/RCK.

Also enclosed herewith are the following items:

☒ Return Receipt Postcard

☐ Petition for Extension of Time

☐ Notice of Change of Address

☐ Fee Authorization Form authorizing a deposit account debit in the amount of $ for fees (   ).

☐ Other:

Respectfully submitted,
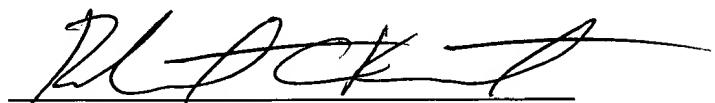
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